NON-PUBLIC?: N
ACCESSION #: 9210230308
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Callaway Plant Unit 1 PAGE: 1 OF 04

DOCKET NUMBER: 05000483

TITLE: Reactor Trip Due to a Failure of a Lockout Relay in the Turbine Thrust Bearing Wear Detector Test Circuitry
EVENT DATE: 09/20/92 LER #: 92-010-00 REPORT DATE: 10/19/92

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Thomas P. Sharkey, Supervising Engineer, Site Licensing TELEPHONE: (314) 676-8336

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: IT COMPONENT: 68 MANUFACTURER: D324
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On 9/20/92, at 0059 CDT, during performance of a weekly, preventive maintenance test of the main turbine thrust bearing wear detector, the plant experienced a turbine trip when a lockout relay contact failed. The Turbine trip subsequently caused an interlocked, automatic reactor trip, Feedwater Isolation, and Auxiliary Feedwater Actuation. The lockout relay was replaced. The plant was in Mode 1 at 100% power with the Reactor Coolant System at 588 degrees F and 2230 psig at the time of the trip. The licensed operators responded to the trip per plant procedures.

The plant was returned to Mode 1 - Power Operations at 0610 on 9/21/92. The lockout relay was replaced and satisfactorily tested prior to returning the unit to service. In order to minimize the potential for future trips during turbine system testing, a review of the current

turbine test program was performed to evaluate the risk of a failure during testing causing a trip versus the reliability benefit gained from the testing. Test frequencies will be adjusted accordingly.

END OF ABSTRACT

BASIS FOR REPORTABILITY:

This event is reported per 10CFR50.73(a)(2)(iv) to report reactor protection system and engineered safety feature actuations.

CONDITION AT TIME OF EVENT:

Mode 1 - Power Operations; 100% Reactor Power

Reactor Coolant System (RCS): Temperature (average) - 588 degrees F

Pressure - 2230 psig

DESCRIPTION OF THE EVENT:

On 9/20/92, at 0059 CDT, during performance of a weekly, preventive maintenance test of the main turbine thrust bearing wear detector, the plant experienced a turbine trip when a lockout relay contact (1)_/ failed. The turbine trip subsequently caused an interlocked, automatic reactor trip, Feedwater Isolation (2)_/, and Auxiliary Feedwater Actuation (3)_/. Both motor driven and the Turbine driven auxiliary feedwater pumps automatically started as expected.

A licensed reactor operator performed the test. The test checks the turbine thrust bearing plate pressure switches which are used to initiate a turbine trip in order to protect the turbine from excessive longitudinal movement. Excessive wear of one thrust plate activates two pressure switches set at different levels of pressure, which correspond to different shaft displacements. The first represents an alarm level, the second a trip. The pressure switch contacts are connected in series, constituting a two-out-of-two logic arrangement. A third series contact, belonging to the lockout relay, permits the trip line to be opened for the testing of the thrust bearing wear detector. When the lockout relay failed, the trip signal generated from the test was allowed through the turbine trip circuitry, and the turbine trip/reactor trip occurred.

Plant safety systems performed as required. The plant was returned to Mode 1 - Power Operations at 0610 on 9/21/92.

ROOT CAUSE:

The root cause of the event was the failure of the lockout relay contact in the main turbine thrust bearing wear detector test circuitry.

CORRECTIVE ACTIONS:

1. The lockout relay was replaced and satisfactorily tested prior to returning the unit to service.

2. In order to minimize the potential for future trips during turbine system testing, a review of the current Turbine test program was performed to evaluate the risk of a failure during testing causing a trip versus the reliability benefit gained from the testing. Test frequencies will be adjusted accordingly.

SAFETY SIGNIFICANCE:

This reactor trip was caused by the failure of a relay in a turbine test circuit. The Turbine and reactor tripped per design and plant safety features functioned as required. A failure of this lockout relay at a time other than during turbine system testing would have no impact on plant operation or on the ability of the turbine system to protect the turbine from overspeed. Therefore, there was no threat to the public health or safety.

PREVIOUS OCCURRENCES:

None.

FOOTNOTES:

The system and component codes listed below are from IEEE Standard 805-1984 and 803A-1984, respectively.

(1) System - IT, Component - 68

Manufacturer - Deutsch Relays, Inc.

Model # - Deutsch P/N E410-1227

Serial # - 99699 7711

(2) System - JC

(3) System - BA

(4) System - SH, Component - V

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Callaway Plant
Post Office Box 620
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UNION
ELECTRIC

October 19, 1992

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

ULNRC-2708

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 92-010-00
REACTOR TRIP DUE TO A FAILURE OF A
LOCKOUT RELAY IN THE TURBINE THRUST
BEARING WEAR DETECTOR TEST CIRCUITRY

The enclosed Licensee Event Report is submitted pursuant to 10CFR 50.73(a)(2)(iv) concerning Reactor Protection, i.e. Reactor Trip; and Engineering Safety Feature Actuations, i.e. Feedwater Isolation.

W. R. Campbell
Manager, Callaway Plant

WRC/TPS/MAH/lrj

Enclosure

cc: Distribution attached

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cc distribution for ULNRC-2708

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